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## **TAX POLICY AT THE OUTSKIRTS OF EU: GREENLAND**

**Carsten Vesterø Jensen**

**Søren Bo Nielsen**

# Tax policy at the outskirts of EU: Greenland

Carsten Vesterø Jensen, Central Customs and Tax, Denmark

Søren Bo Nielsen, Copenhagen Business School, Denmark

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## Abstract

This paper provides an assessment of Greenland's tax system and contemplates changes that may be undertaken in the future to prepare for greater economic self-reliance and for the country's participation in the wider world economy. At the outskirts of Europe, Greenland is an autonomous part of the Danish kingdom, though currently not a member of EU. However, its cooperation with European countries and its dependency on international trade renders it necessary for the tax system in Greenland to be attuned to developments in the rest of the world. Drawing on a thorough international benchmarking analysis of Greenland's tax system, the paper's special focus will be on the corporate tax system and its interplay with personal taxation, as well on as the system of import duties. In particular, we carry out computations of effective marginal and average corporate tax rates, as well as average effective tax burdens on consumption, labour income and capital income, and compare these to similar measures for EU countries. In addition, we outline how Greenland's economic policy in other areas interferes with tax policy. Especially fishery regulation, management of government-owned companies, and housing policy have major implications for the tax system.

Key words: international benchmarking, effective tax rates, Greenland

JEL: H20, H25

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# 1. Introduction

This paper gives an introduction to a number of tax issues in Greenland. It is based on a recent benchmarking analysis initiated by the Greenlandic Home Rule government. The two authors of this paper were members of the benchmarking commission, and the results of the benchmarking analysis are presented in the report "Skatter og afgifter i Grønland, 2003". The government in Greenland is currently making up its mind as to possible changes in the tax system based on the report.

We begin with a short introduction to Greenland. Greenland is the world's largest island with an area of around 2.2 million km<sup>2</sup>, of which 410.000 km<sup>2</sup> are not covered by ice. (The area of Denmark is around 43.000 km<sup>2</sup>). The climate in Greenland is arctic, and the northernmost extremity of Greenland is situated less than 730 km from the North Pole. The distance from north to south is 2.670 km. Just over 56.000 people live in Greenland. The central parts of West Greenland are the most densely populated. Most of the population - around 45.000 - lives in the towns, of which Nuuk (Godthåb) is the largest. 60 per cent of West Greenland's population lives in the six largest towns; the rest in more than 120 settlements, trading posts and sheep stations. The official languages are Greenlandic and Danish.

Greenland is in a national union with Denmark together with the Faroe Islands. In 1979, however, the Home Rule was introduced, after which the Danish parliament, Folketinget, has transferred almost all legislation to the Greenlandic parliament, Landstinget. The Danish administration retains control over some areas of government as e.g. foreign policy, defence and administration of justice.

Greenland has two levels of public administration, the Home Rule (central government) and 18 municipalities. The municipalities collect income taxes to finance their activities. Most of them, however, are to a very high degree dependent on transfers from the Home Rule and from the (two) rich municipalities, namely the biggest local entity, the capital Nuuk with 14.000 inhabitants, and the smallest entity, the navy base Ivittuut, with around 160 inhabitants. The other municipalities have between some 500 and almost 6.000 inhabitants. Another important feature is the big number of companies owned, partly or entirely, by the Home Rule. The public companies are dealing with traditional public services as well as with activities which elsewhere would be undertaken by private businesses. The public companies raise very limited revenue (dividends) for the Home Rule; they are first of all characterized by being heavily dependent on public subsidies.

Greenland is autonomous regarding tax policy and was so even before the introduction of the Home Rule in 1979. The Home Rule government as well as the municipalities raise and collect taxes.

Greenland's economy is dominated by shrimps and prawns, which account for about 2/3 of Greenland's exports, with halibut, crab and cod making up the rest of exports. Most of everyday necessities are imported, and international trade is dominated by the trade with Denmark.

The GDP of Greenland is estimated to be around 9,1 billion DKK, or 1.2 billion EUR (2001); payments and unilateral transfers from the Danish state make up around 3,5 billion DKK (almost 0.5 billion EUR). Taking net factor flows abroad into account, disposable GNP amounts to 12.3 billion DKK (1.65 billion EUR) in 2001, per capita not much lower than the level in Denmark.

The Home Rule government finances are peculiar in the sense that the block grant from Denmark makes up more than half of the total revenue, as shown below:

Table 1	THE HOME RULE GOVERNMENT'S REVENUE, 2001	
	1.000 DKK	Per cent of total revenue
Block grants from Denmark	2.793.300	51
Other payments from Denmark	115.766	2
Payments from EU (fishing licenses)	321.398	6
Direct taxes	776.259	14
Indirect taxes	671.622	12
Dividends from public companies	212.619	4
Interest	220.833	4
Repayments on loans	242.552	5
Other income	87.877	2
<b>Total</b>	<b>5.442.226</b>	<b>100</b>

Source: Budget proposal 2003 of the Home Rule government

As table 1 shows, no less than 53 per cent of total public sector revenue in Greenland consist of payments from Denmark. Payments from EU for fishery licenses amount to another 6 per cent, while the two main tax categories, direct (income) and indirect taxes (import levies), contribute with only 14 and 12 per cent, respectively.

Section 2 provides a more detailed description of the tax system in Greenland. Section 3 juxtaposes tax rates and burdens in Greenland to tax rates and burdens in other Nordic and European countries. Then section 4 presents some considerations as to the design of the tax system and the relationship between tax policy and other economic policy in Greenland. The benchmarking committee put forth a number of recommendations as to changes in the tax system in Greenland. Some of these are presented in section 5. Finally, section 6 offers concluding remarks.

## 2. The tax system in Greenland

The overall structure of the tax system in Greenland is shown below:

Table 2 TOTAL TAX REVENUE 2001. DISTRIBUTION BY TAXES	
Provincial government income tax	21
Local income tax	53
Corporate income tax	4
Import duties on alcohol	8
Import duties on tobaccos	7
Other import duties	3
Motor vehicle duties	1
Duty on off-shore prawn production	1
Duty on freightage	2
Other duties	-
Total tax revenue	100

Source: The Tax Directorate of Greenland

The personal income tax is the main revenue raiser in Greenland contributing with around 75 per cent of total tax revenue. The local income tax makes up 75 per cent of the income tax revenue. Import duties account for nearly 20 per cent of total tax revenue. Other taxes and duties, including corporate income tax, contribute with less than 10 per cent. Greenland has a traditional income tax system based on the (global income) principle of taxing the total income on a yearly basis irrespective of the type or source of incomes.

Everybody living or staying in Greenland more than 6 months is liable to pay taxes in Greenland. Husband and wife are taxed jointly. The Greenlandic income tax is a flat rate tax. The income tax is made up of an 11 percent national tax, a 4 per cent joint municipal tax and a local municipal tax of between 25 and 29 per cent (the navy base municipality charging only 20 per cent, though).

The personal allowance and a standard allowance ensure that the income tax has got a progressive effect. The personal allowance is for everybody 40.000 DKK on a yearly basis. The standard allowance is 8.000 DKK. Everybody can claim the standard allowance instead of deducting actual operating costs or costs of working. Married couples get double allowances.

Greenland has a manual income assessment system and a withholding tax system for employees. The tax rates and allowances are shown below for the year 1993 and 2003. It is notable that very little has been changed over this 10-year period:

Table 3 TAX RATES AND ALLOWANCES 1993 AND 2003		
	1993	2003
Provincial income tax	11 per cent	11 per cent
Joint municipal tax	4 -	4 -
Municipal tax (average)	25,8 -	26,8 -
Corporate income tax	35 -	35 -
Corporate income tax for raw material extraction	35 -	30 -
Personal allowance	40.000 DKK	40.000 DKK
Standard allowance	6.000 DKK	8.000 DKK
Tax free business income	5.000 DKK	5.000 DKK

Source: The Tax Directorate of Greenland

Capital income and business income are taxed together with labour income with the only exception that a capital income of 5.000 DKK annually is tax-free. This tax exemption covers every type of business income, e.g. income from fishing and hunting, as well as interests and other types of capital income.

Shareholder dividends are taxed at the same level as other income by the tax rate of the municipality to which the company belongs. It is notable that the company is allowed to deduct dividends when computing its corporate income tax liability. Capital gains are normally tax-free in Greenland. Capital gains are only taxed if they are earned via speculation or in trade.

There is no taxation of wealth or possession of capital, real property, inheritance or land use (all land is in the hands of the public sector, but no fee is charged for private use).

Companies are due to pay a corporation tax of 35 per cent. For companies dealing with raw material extraction, however, the tax rate is only 30 per cent. The tax base is the income of the company less costs, including depreciation. The access to depreciation allowances on equipment and buildings is very favourable compared to the rulings in European countries. First, there is a rather general access to deduct investment costs in the year of purchase. Second, the tax-related rates of depreciation of equipment and buildings are relatively high, and third, if a company computes a positive taxable income, it is allowed to undertake further depreciation of assets corresponding to up to half of its calculated taxable income. In reality, the system approaches free depreciation, which was actually the rule in place until some tightening of corporate income taxation took place with effect in 2001 and onwards.

Greenland has no VAT, sales tax or other general tax on consumption.

Duties and excises are important revenue raisers for the Home Rule government contributing with nearly 50 per cent of the total tax revenue on provincial level. The import duties are the

most important indirect revenue raisers. First of all, duties on tobaccos (cigarettes) and alcohol (beer) contribute considerably to the revenue. Furthermore, there are import duties on vehicles, chocolate and on a number of commodities of less fiscal importance. The import duties are like excises, but collected at the import level only, rendering the importers liable to pay the duties.

Apart from import duties there are a number of other duties. The duty on freightage (primarily on commodities coming from abroad) has earlier played a significant role. However, the parliament has recently decided to abolish this duty. The duty on off shore prawn production has raised significant revenue in earlier years with high world market prices on prawns and high tax rates. The prawn duty is levied only on prawns that are produced on board the fishing ships. The duty is aiming at giving incentives for local prawn production on shore.

The employers pay a labour market contribution making up 0,9 per cent of the total wages. Finally, there is a current tax on vehicles, and worth mentioning are also the duties on lotteries, gambling and stamps.

When providing an overview of the tax system it is important also to include the so-called tax expenditures which are the indirect subsidies caused by a favourable tax treatment of certain activities or persons. There has not been made any calculation of the size of the tax expenditures in Greenland. However, some important examples could be mentioned: All business income less operation costs is taxable. However, deductions for depreciations are more favourable than the actual book depreciations. All types of income are in principle taxable. However, a number of non-pecuniary incomes are not taxed such as free (time-limited) housing and free holiday-travel for employed staff.

Finally, all capital income is in principle taxable. However, the owners of private houses and the users of public land for private housing or production purposes are not taxed.

### **3. Tax burdens in an international context**

This section places the tax system in Greenland in an international context. Moreover, it computes various measures of tax burdens in Greenland and compares them to parallel measures for selected EU countries.

#### *The tax system in Greenland and other countries*

First of all, the Greenlandic tax system could be compared with the tax systems in the neighbouring countries Denmark, Faroe islands, Norway, Sweden and Iceland. Such a comparison shows that Greenland is peculiar in a number of ways. 1) Labour and capital income are taxed accord-

ing to a common scheme; in the other Nordic countries labour and capital income are taxed separately and according to different schemes. 2) The income taxation is flat-rate; the other countries have progressive taxation schemes. 3) The tax rate on personal capital income is only slightly higher than the corporate tax rate like in Sweden and Faroe Islands; in Denmark, however, the top personal tax rate is around 30 percentage point higher than the corporate tax rate, and in Iceland and Norway the corporate tax rate is higher than the personal tax rate. 4) The tax rate on personal business is only slightly higher than the tax on companies; in some of the other countries, like in Denmark and Iceland, there is a huge difference in the level of tax. 5) There is, like in Norway, no double taxation of dividends; in the other countries, dividends are taxed as company income and subsequently as shareholder income. 6) Domestic and foreign shareholders are taxed equally; this is not the case in all neighbouring countries. 7) Greenland has no value added tax, VAT; all the other countries do have a VAT.

Most significant of these is the Greenlandic flat-rate income tax system and the absence of a general tax on consumption – VAT.

The total tax burden in Greenland amounts to around 35 per cent of GDP. That is low compared to e.g. Denmark and Sweden with a tax burden amounting to more than 50 per cent of GDP. On the other hand, Greenland's tax burden is close to the OECD average of 37,5 per cent and close to e.g. the level in neighbouring countries Iceland and Canada. The tax burden in Greenland is higher than in USA, where it is 28,9 per cent of GDP.

The income tax amounts to nearly 25 per cent of GDP, which is very close to the level in Denmark, namely 26 per cent of GDP. The OECD average is only 10,2 per cent. The other OECD-countries rely to a much larger degree than Greenland and Denmark on social security contributions.

It is significant that consumption taxation is very low in Greenland, only corresponding to 8 per cent of GDP. In Denmark the similar figure is 16,9 per cent and the other Nordic countries are at almost the same level. Only the USA has lower taxation of consumption, amounting to only 4,2 per cent of GDP.

### *Effective corporate tax rates*

The general corporate income tax rate in Greenland, 35 per cent, is a little bit higher than the average when compared with the tax rates of the EU-member countries. An exception in Greenland is the lower rate, 30 per cent, on companies dealing with raw materials extraction. The nominal corporate income tax rates, however, do not give the full picture of the real tax burden. To that end it is much more fruitful to look at the effective marginal and average tax rates calculated below.



Tax depreciation is a crucial element when assessing the tax base. When comparing the depreciations rules in Greenland with the rules in the EU-countries, it is evident that the Greenlandic rules are favourable. This is due to first of all very liberal rules allowing immediate write-off and an access to reduce company surplus by means of extraordinary depreciation.

The so-called effective marginal and average corporate income tax rates measure the burden of taxation on, respectively, marginal investments in existing firms, and wholesale investments in new firms. They are computed below for Greenland for the years 1999 and 2001, i.e. before and after the reform of the country's corporate income tax system (prior to 2001, there was completely liberal depreciation, but with effect in 2001 maximum depreciation rates for different types of capital were introduced). The effective tax rates come in two versions: one without inclusion of personal capital income tax rates, and one with. Further, the tax rates are to begin with calculated for different types of assets (such as immaterial assets, buildings, machinery, financial assets and inventories) and for different modes of finance (retained earnings, new shares and debt). In principle this yields fifteen different effective tax rates (and for marginal as well as average, and without/with personal tax rates). In order to provide a clearer picture of corporate tax burdens, these fifteen rates are aggregated into single measures below.

Once the effective tax rates have been computed for Greenland, it is possible to compare with similar measures for EU countries on the basis of the computations made for the EU Commission report on company taxation in the internal market (cfr. SEC 1681, October 2001). For the precise method for computing the effective tax rates we shall have to refer to the relevant Appendix of the Commission report (available from the authors upon request); we do wish to mention, though, that computations are undertaken on the following assumptions as to key parameters:

Shareholders' real, before-tax return on alternative investments amounts to 5 percent, and the inflation rate is 2 percent. Economic depreciation rates are taken to be 15.35 pct. (immaterial assets), 3.1 pct. (buildings), 17.5 pct. (buildings), and 0 (financial assets, inventories). As a comparison, the maximum depreciation rates for these types of assets in Greenland are currently 30 pct. (immaterial assets, equipment), 5 pct. (buildings), and 0 for the remainder (except for 10 pct. for ships). Finally, equal weights are assumed in aggregating over types of assets, while the three forms of finance (retained earnings, new issues of shares, and debt) are taken to account for 55, 10, and 35 pct., respectively.

Table 4 below shows for all EU countries plus Greenland (1) formal corporate income tax rates; (2) weighted capital costs; and (3) weighted effective marginal corporate tax rates for all countries in 1999 and 2001. In addition, the underlying capital costs for individual asset types and financing

modes are presented for 1999. The numbers in the table only reflect taxation at the level of the company; personal taxes on corporate income are not included.

Greenland's nominal corporate income tax rate lies in the middle of the pack in both years. Ireland is at the bottom with solely 10 pct., while Germany in 1999 had a total nominal corporate tax of 52.4 pct. The German tax reform which was implemented in 2001 led to a marked reduction of the corporate tax rate, and in that year it is indeed Belgium and Italy that are at the top of the list with rates slightly above 40 pct.

The weighted capital costs for marginal investments in Greenland were 5.5 pct. in 1999 and 6.3 pct. in 2001. The number in 1999 is the lowest on the list save for Italy, and the weighted effective marginal tax rate in Greenland was only 9.2 pct. in that year. The comparable numbers for 2001 reflect the reform of depreciation rules in Greenland, since the weighted capital cost rises, as does the associated weighted effective marginal tax rate – to 20.5 pct. Now more countries have lower effective rates, but there are also many countries with higher effective rates. For instance, Germany's and France's weighted effective marginal tax rates are 26 and 32 pct., respectively, in 2001.

Table 4	COST OF CAPITAL AND EFFECTIVE MARGINAL TAX RATES																
Country	2001			1999			Cost of capital 1999								EMTR 1999		
	Corporate income tax	Cost of capital	EMTR	Corporate income tax	Cost of capital	EMTR	Immaterial assets	Buildings	Equipment	Financial assets	Inventories	Retained earnings	New issues of shares	Debt	Retained earnings	New issues of shares	Debt
Austria	34,0	5,7	12,6	34,0	6,3	20,9	5,9	6,1	5,9	7,3	6,3	7,5	7,5	4,0	33,3	33,3	-25,0
Belgium	40,2	6,4	22,4	40,2	6,4	22,4	5,2	7,0	5,3	8,0	6,7	8,0	8,0	3,5	37,5	37,5	-42,9
Germany	39,4	6,8	26,1	52,4	7,3	31,0	5,4	7,2	5,8	10,0	7,9	9,7	7,6	3,2	48,4	35,5	-56,2
Denmark	30,0	6,4	22,4	32,0	6,4	21,6	4,2	8,0	5,4	7,1	7,1	7,4	7,4	4,4	32,7	32,7	-12,8
Spain	35,0	6,5	22,8	35,0	6,5	22,8	6,5	6,7	5,4	7,4	6,4	7,7	7,7	4,1	35,1	35,1	-21,9
Greece	37,5	6,0	16,9	40,0	6,1	18,2	6,8	5,1	6,1	5,1	7,4	7,6	7,6	3,4	34,2	34,2	-47,1
France	36,4	7,3	31,8	40,0	7,5	33,2	5,2	8,5	8,4	8,0	7,4	9,0	9,0	4,6	44,4	44,4	-8,7
Finland	29,0	6,4	21,3	28,0	6,2	19,9	6,1	6,1	5,6	6,8	6,8	7,2	7,2	4,5	30,5	30,5	-11,1
Italy	40,3	4,3	-15,9	41,3	4,8	-4,1	2,9	4,6	3,8	7,7	5,0	5,5	5,5	3,6	10,0	10,0	-38,9
Ireland	10,0	5,7	11,7	10,0	5,7	11,7	5,3	6,8	5,2	5,5	5,5	5,9	5,9	5,2	15,2	15,2	3,8
Luxembourg	37,5	6,3	20,7	37,5	6,3	20,7	5,2	6,8	5,3	7,7	6,5	7,7	7,7	3,7	35,1	35,1	-35,1
Holland	35,0	6,5	22,7	35,0	6,5	22,6	5,1	6,9	5,9	7,4	6,9	7,7	7,7	4,1	35,1	35,1	-21,9
Portugal	35,2	6,3	21,0	37,4	6,5	22,5	6,7	6,2	5,2	7,7	6,5	7,9	7,9	3,9	36,7	36,7	-28,2
Sweeden	28,0	5,8	14,3	28,0	5,8	14,3	5,0	6,0	5,0	6,6	6,6	6,7	6,7	4,3	25,4	25,4	-39,5
UK	30,0	6,7	24,8	30,0	6,6	24,7	5,5	8,2	5,6	6,9	6,9	7,7	7,7	4,8	35,1	35,1	-25,0
Greenland	35,0	6,3	20,5	35,0	5,5	9,2	4,2	4,2	4,2	7,5	7,5	6,5	6,9	3,5	23,1	28,1	-41,3

Source: EU Commission (2001) and own computations

It is possible to demonstrate the tax burden for entire new firms by computing effective average tax rates along the lines of the EU Commission report (see also Devereux and Griffith, 2003). The intention is to show the total tax burden in such entire firms, not just the tax burden on the marginal investment as measured by the effective marginal tax rate. On top of the values of key parameters selected for the effective tax rates it is now also necessary to specify the before-tax supranormal rate of return for investment in a new firm. A rate of return of 20 pct. is used in the calculations below.

The result of computations of effective average tax rates for Greenland as well as for the EU countries are shown in Table 5 below. It lists (1) formal corporate tax rate; (2) weighted effective average tax rate for 1999 and 2001. In addition, effective average tax rates for single asset types and for modes of finance are shown in the table.

That the formal corporate tax rate in Greenland is not very different from the rates in EU countries has been noted already. This is in fact the reason why the weighted effective average tax

rates in Greenland are at the level of those in EU. With a high pre-tax rate of return (as the 20 pct.), the effective average tax rate approaches the nominal corporate tax rate. Implicit subsidies in advantageous depreciation rules play a lesser role for average than marginal tax rates. Still, the free depreciation in Greenland's corporate tax system in 1999 does drive effective average tax rates for immaterial assets, buildings and machinery somewhat below the nominal rate.

Table 5		EFFECTIVE AVERAGE TAX RATES										
Country	Corporate income tax 2001	EATR 2001	Corporate income tax 1999	EATR 1999	1999					1999		
					Immaterial assets	Buildings	Equipment	Financial assets	Inventories	Retained earnings	New issues of shares	Debt
Austria	34,00	27,9	34,00	29,8	28,6	29,2	28,4	33,2	29,9	33,9	33,9	22,3
Belgium	40,17	34,5	40,17	34,5	30,7	36,1	31,0	39,2	35,5	39,1	39,1	25,8
Germany	39,35	34,9	52,35	39,1	33,9	39,0	34,9	46,8	40,8	46,1	40,1	27,7
Denmark	30,00	29,0	32,00	28,8	21,3	34,3	25,3	31,4	31,4	32,3	32,3	22,3
Spain	35,00	31,0	35,00	31,0	31,1	31,8	27,4	34,2	30,7	35,2	35,2	23,3
Greece	37,50	28,0	40,00	29,6	35,5	30,4	33,4	11,6	37,1	34,4	34,4	20,8
France	36,43	34,7	40,00	37,5	30,6	40,6	40,1	39,0	37,1	42,1	42,1	28,8
Finland	29,00	26,6	28,00	25,5	24,8	24,8	23,1	27,3	27,3	28,8	28,8	19,3
Italy	40,25	27,6	41,25	29,8	24,9	29,8	27,4	36,1	31,1	31,8	31,8	26,1
Ireland	10,00	10,5	10,00	10,5	8,9	15,8	8,2	9,8	9,8	11,7	11,7	8,2
Luxembourg	37,45	32,2	37,45	32,2	28,6	33,7	29,2	36,6	32,9	36,6	36,6	24,0
Holland	35,00	31,0	35,00	31,0	26,7	32,4	29,2	34,2	32,5	35,1	35,1	23,3
Portugal	35,20	37,0	37,40	32,6	33,2	31,8	28,6	36,5	32,8	37,0	37,0	24,5
Sweeden	28,00	22,9	28,00	22,9	19,6	23,4	19,7	25,7	25,7	26,0	26,0	17,1
UK	30,00	28,3	30,00	28,2	24,2	33,7	24,7	29,3	29,3	31,8	31,8	21,6
Greenland	35,00	35,0	35,00	32,7	29,0	29,0	29,0	38,2	38,2	32,5	36,5	27,1

Source: EU Commission (2001) and own computations

#### *Average effective tax rates on consumption, labour and capital income*

A relatively simple and rough way to compare the tax systems in different countries is to calculate the size of the tax burdens on the three primary objects of taxation: consumption, labour income, and capital income. Below we compute in table 6 average effective tax burdens on the three factors and compare them to similar measures for the EU countries.

Our point of departure is the report by Martinez-Mongay (2000), which introduces the average effective tax burdens and provides computations for EU countries. It builds on the method suggested by Mendoza et al. (1994) (for an early application to EU countries see Lassen and Nielsen (1996)).

The average effective tax on consumption in Greenland can be gauged to 11 pct. in 2001. That can be compared to tax burdens on consumption of 30.4 pct. in Denmark in 1998 (and an estimated burden of 29.6 pct. for 2001). For EU-15 the numbers are, respectively, 20.5 pct. and 20.9 pct. It emerges clearly that the tax burden on consumption in Greenland is very low in an international context. All EU countries have average effective tax rates on consumption markedly above Greenland's.

For labour income it is possible to derive an average effective tax rate in Greenland of some 28 pct. in 2001. As can be seen in the table, also this number is somewhat lower than similar statistics for Denmark and EU-15. For Denmark, Martinez-Mongay has estimated 42.7 pct. in 1998 and, for 2001, 43.0 pct., while the averages for EU-15 are 37.3 pct. in 1998 and an estimated 36.2 pct. in 2001. In the table, only Ireland, Greece and UK have lower average effective tax burdens on labour income than Greenland.

The average effective tax rate on capital income can be calculated at 22 pct. for Greenland in 2001. The table again contains the similar statistics for Denmark and the rest of the EU countries in 1998 and 2001 (estimated). EU-15 has rates of 22.9 and 23.0 pct. in the two years, while the Danish tax burdens on capital are somewhat higher at 28.4 pct. and 29.0 pct. The upshot of these figures is that Greenland does not deviate from the EU countries, when it comes to the average effective tax burden on capital, although its rate is significantly lower than that of Denmark.

In conclusion, Greenland's tax system entails a much more lenient taxation of consumption than is the case in EU and also a relatively low tax burden on labour income. For capital income, though, the average effective tax rate is at the level of the EU countries.

Table 6	AVERAGE EFFECTIVE TAX BURDENS					
Country	Consumption		Labour incomeincome		Capital income	
	1998	2001*	1998	2001*	1998	2001*
Belgium	20,4	20,8	45,1	43,6	23,8	23,5
Germany	17,0	18,4	43,7	42,0	15,4	14,8
Spain	16,8	18,3	29,6	30,0	18,5	18,5
France	24,8	23,9	41,3	41,8	21,6	21,8
Ireland	24,0	24,7	23,2	22,6	20,5	19,5
Italy	23,2	22,9	35,3	35,1	25,5	25,4
Luxembourg	25,3	26,7	31,7	30,4	34,3	32,2
Holland	18,6	20,2	35,9	32,9	24,3	23,3
Austria	23,2	24,1	41,0	39,3	19,2	17,3
Portugal	22,0	23,8	24,8	28,7	22,1	26,0
Finland	24,3	24,9	43,8	42,8	24,3	24,3
Greece	19,3	20,8	28,7	29,3	20,3	17,8
Sweeden	25,8	24,2	51,9	50,6	28,5	27,3
UK	18,1	18,4	25,4	24,7	34,1	34,0
Denmark	30,4	29,6	42,7	43,0	28,4	29,0
EU-15	20,5	20,9	37,3	36,2	22,9	23,0
Greenland		11,0		28,0		22,0

Source: Martinez-Mongay (2000) and own computations. Figures for 2001 are estimates.

## 4. Tax policy and other economic policy

In the design of tax policy and in the evaluation of its impact it is important to realize that tax policy does not stand alone, but instead interferes with other lines of economic policy. In this section we first list some general aims in tax policy, which, by the way, to a large extent also constitute guidelines for the design of other economic policies.

Then we look closer at some of the specific policy areas with which taxes and duties interfere. We begin with some considerations as to the possible contributions of natural resources to the revenue side of the public budget. Resources are here both renewable and exhaustible resources. Next, we consider industrial, labour market, social and housing policies. Importantly, the more resource rents in fishery that are captured by the public sector; the more stringent the scrutiny of funds spent on industrial development; the less housing is subsidized, and the more revenue can be harvested by publicly owned companies, the smaller is the burden placed on the tax system.

The most important criteria for a well-functioning tax system are well recognized and concern (i) efficiency; (ii) distribution; (iii) horizontal equity and fairness; (iv) administration; (v) compliance; and (vi) incentives for tax avoidance and evasion. The best taxes are those that interfere as little as possible with private sector activity; the distributional consequences of which are acceptable to the public at large; that imply that people with comparable incomes pay comparable taxes; that are easy to administer and to comply with; and that provide few incentives for evasion.

It is essential to realize that all the criteria in some form can be transferred to other economic policies. As an example, social transfers should not interfere too much with behaviour on the part of recipients by, e.g., keeping them away from the labour market. They should be paid to the especially needy, and the way they are paid out should counter cheating. As another example, if the tax system has gone out of its way to secure a reasonable distribution of consumption possibilities in society, a housing policy with intransparent and perhaps perverse distributional effects can throw everything overboard. And if the taxation of interest is kept low to induce people to save for old age, the effect will diminish, if people with low savings are awarded relatively high pensions when old.

Finally, if the opportunities for capturing resource rents in the exploitation of natural resources are not used, the government has to turn to less efficient revenue sources, whence taxes inflict higher than necessary deadweight losses on the economy.

#### *Natural resource (fishery) policy*

Natural resources can be renewable or exhaustible. They enter the economy's production together with physical capital and labour (human capital). Some societies have only few natural resources, and their living standards hence rest on the use of physical and human capital. Most countries, though, utilize natural resources in agriculture, fishery, oil production, mining, etc.

The management of natural resources is the responsibility of society at large. At the outset, these resources are common, and their exploitation would benefit the entire population. But the actual decisions made by politicians in practice determine the character of resource use and thus who in the end stands to gain from the resources.

One possible policy is 'free for all', the entirely unregulated use of a resource. This normally leads to the 'tragedy of the commons'. Each individual user of the resource has no incentive to take into account that his/her own exploitation of the resource diminishes the opportunities of others to utilize the resource. As a consequence, the exhaustible resource will be exploited too rapidly, or the renewable resource is harvested so intensively that it prevents future resource use - or in the

worst cases, the resource becomes extinct. And unregulated exploitation of the resource leads to large losses for society, especially if those using the resource have invested in too much capacity.

There are many examples of minor and major tragedies in resource use, not the least in fishery. The technical development in fishery equipment has proceeded so far that it has enabled the eradication of many species and so intensive harvesting that it takes many years to bring the stock back to a level, which renders utilization of the resource possible again.

Another possible policy is to hand over the rights to exploit a given quota of the resource to a group in society for free. Initially, the resource in question represents value to society at large, but this is broken by limiting the use of the resource to only few members of society. Only they have the opportunity to secure additional income from the resource. What could have been an income source for the entire country ends up as an income source for only a group.

There are likewise many examples of this kind of policy. The aim typically has been to prevent tragedies and excess investments in capacity, and to facilitate increasing returns to scale. This management of the resource is likely to be superior to the free-for-all situation, but the possibility of the entire society gaining from the resource use is lost.

A third possibility is to hand over the rights to utilize the resource to private agents at a cost. The price of access to the resource should ideally reflect the supranormal income, which the user can derive from exploiting the resource, once inputs of capital and labour are accounted for. This price can, in principle, be secured by auctioning off rights to utilize the resource, if enough independent interested parties bid for the rights. The revenue from such auctioning off of quotas would accrue to the public fisci and finance the provision of public services and transfers. Only for higher levels of public expenditures does it become necessary to resort to taxation.

In the case of Greenland the rights to exploit prawns and fish stocks have been handed out for free. In fact, there are even many examples of fishery being subsidized rather than taxed by the government in Greenland. Systems of regulating the use of natural resources vary immensely across countries, and ideal regimes will be hard to find. Fishery regulation has been discussed extensively in many countries. For interesting accounts of regulation in Iceland and the Faroe Islands we refer to Gróttin (2003) and Gylfason and Weitzman (2003). The former points out that it will be possible to earn a 'double dividend' in the Faroe Islands, if regulation shifts from the present fishing-day system to a system, where the exploitation of the resource is subject to a tax (replicating an auctioning system). On one hand, management of fish stocks is improved upon; on the other, revenue from quotas or taxes lowers the need for tax revenue, reducing distortions in the tax system. Hence, the wording of



double dividend. Gylfason and Weitsman argue that resource depletion charges (RDCs), while under ideal conditions being equivalent to auctioned-off quotas, may in practice have a number of advantages.

Interestingly, as was mentioned in the Introduction, Greenland obtains a payment of more than 300 mill. DKK primarily for fishery licences from EU. What the government needs to do is essentially derive similar license fees from internal agents in fishery. There are many (free) licenses in Greenland's fishery today; they are with or without quotas, and limited or not limited in time. But it should be legally feasible to take back these licenses to Greenland's government after a period of 5-7 years or so, provided the current users are given sufficient notice. Thereafter, they can be auctioned off, or resource depletion charges can be introduced, so that the public fiscs can collect the revenues.

### *Industrial policy*

As to industrial policy, a sound general objective is to leave private and public firms to themselves. One caveat concerns those firms that are natural monopolies, though. Here, there is an argument for exploiting increasing returns to scale, but the extent to which profits should be driven below zero and the firms in question receive subsidies must be determined by the scarcity and dearth of public funds.

In many countries there is a pronounced tradition for public subsidies for a plethora of purposes. There are two important consequences of this. First, firms have an incentive to 'make themselves ready for a subsidy', i.e. conduct excessive investments, and incur excessive costs etc., so that the need for a subsidy becomes more pressing. Second, it is, of course, necessary to levy additional taxes in order to finance the subsidies. These taxes generate distortions, and the cost of these distortions must be taken into account in any decision to concede subsidies. Higher labour income taxes, for instance, may lead to lower labour supply and to higher wages, and in some cases those firms that benefit from the subsidies at the same time suffer from having to pay higher wages to their workers.

Criteria for offering subsidies must be stringent. Subsidies should only be given to activities that are socially desirable and privately unprofitable. If an activity is not profitable to undertake by the firm in question, there is a pronounced risk that it also is not desirable for society as a whole. And if the activity is privately profitable, there is no reason for the subsidy in the first place.

When would a project be privately unprofitable, yet welfare-enhancing? One possibility is that the project generates positive spillovers; other firms learn from production activities in the firm without having to pay for the productivity increase they subsequently are able generate. Another possibility is that the firm faces prices, which do not reflect values to society. An example is the price of

labour. While the firm will have to pay the going wage, the social opportunity cost of using workers in the firm may be lower than the wage, if the workers alternatively would have been unemployed. A second example concerns market prices, which do not reflect society's cost of producing them. If, for instance, the supplier of an input is a monopoly, its price will in general diverge from the marginal cost of producing the input.

A third possible argument for subsidizing might be desirable distributional consequences of some activity. Here, though, one must always contemplate whether there are better-targeted ways of bringing about an improvement in distribution. Public transfers and the tax system are presumably superior in this respect.

What this discussion boils down to is that industrial policy in Greenland should be subjected to stringent tests, before decisions as to handing out subsidies are made. For the moment, a host of publicly owned companies generate no revenue to the government, but instead require continued injection of subsidies. Only a minority of public companies is able to pay dividends to the public fiscs. If this situation can be reversed, it would mean a significant reduction in the need to levy distortionary taxes to finance public expenditures, including subsidies to firms.

### *Housing policy*

An area, which in all countries is tantamount to huge public subsidies, is the housing area. Greenland is no exception here; in fact, housing subsidies, direct plus indirect, are probably bigger than in any other country in Europe. The reasons are many. First, all land is public, and despite the fact that inhabitable land is scarce, users of land pay no fee for their use to the government. Second, many individuals receive personal housing subsidies. Third, owner-occupied housing is subsidized via the fact, that there is no taxation of imputed rent, yet interest on mortgages is tax-deductible. Fourth, the return to capital employed in other parts of the housing market likewise is not taxed. Fifth, part of housing loans receives public subsidies.

An example may clarify the mechanisms and point to the possible magnitude of housing subsidies, i.e. the gap between the private and social cost of housing. For this purpose we take the so-called 10-40-50 arrangement related to owner-occupied housing in Greenland. A house costing 1.4 mill. DKK to construct is financed by the 10-40-50 arrangement. This implies that the prospective owner presents a down-payment of 10 percent; 50 percent of the cost is financed on the market; and 40 percent is financed via public loans for which there are no interest payments nor any payback of the loan during the first 15 years. In the calculation it is further assumed that the value of the land occupied by the house is 10 percent of the cost of the house; that the market interest rate is 5 percent, and that

inflation is 2 percent. Finally, economic depreciation of the house is assumed to be 4 percent per year. Annual private user cost in the house can now be approximated by  $Q[(1-a)[i(1-t)-p]+d]$ , where  $Q$  is the cost of the house;  $a$  the loan subsidy share;  $i$  the nominal interest rate;  $t$  the capital income tax rate;  $p$  the inflation rate; and  $d$  the rate of depreciation. The social user cost of housing amounts to  $Q[r+d]+grQ$ , where  $r$  is the real interest rate and  $g$  the value of the land relative to the cost of the house. Inserting the relevant numbers one can derive that the effective housing subsidy in the 10-40-50 arrangement amounts to around 40 percent of the social cost!

While owner-occupied housing is heavily subsidized in Greenland, rental housing is also (indirectly) subsidized by rent regulation and by personal housing subsidies. The situation is, however, clearly unsustainable; as in other countries with rent regulation and extensive subsidies it is exceedingly difficult to find an apartment or a house almost anywhere in Greenland. A determined movement towards a more freely functioning market seems inevitable. This will entail easing rent regulation and reducing all housing subsidies, probably except for personal housing subsidies. Such a process towards a more flexible housing market will sharply reduce the need to levy taxes to finance housing subsidies and provides our last example of how economic policies in other areas are intimately related to tax policy in Greenland.

## 5. Recommendations for reform

The benchmarking commission referred to in the Introduction recommends a number of (alternative) changes in the Greenlandic tax system.

First of all the commission recommends to stick to the present flat rate income tax system which is very simple and transparent. The commission does not at this stage support the idea of introducing a progressive tax system with a graduated tax rate scheme. That would create administrative problems and make the tax system less transparent. According to the commission, however, there is a need to strengthen the redistribution effects of the tax system as well as of the economic policy in general. The commission, therefore, recommends introduction of a current taxation on real property, a tax on inheritance and gifts, and a tax on the use of land. The commission also recommends a higher personal allowance, financed e.g. by introducing VAT or another form of general tax on consumption and by broadening the income tax base including all income from labour and capital in cash or kind.

The commission recommends sticking to the present business and company taxation system including the present taxation of shareholders' income. There is no need to lower the corporate income tax rate, which presently is very close to the rate of income tax for individuals.

There is also no need to change the existing system of taxation of shareholders' income, according to which shareholder income is taxed at the same level as other capital and labour income. The most pressing issue regarding business income is to amend and strengthen the depreciation rules in order to ensure a higher degree of accordance between tax depreciations and book depreciations with respect to equipments and buildings. In particular, the liberal rules allowing immediate write-off and allowing extraordinary depreciation with positive taxable corporate income should be removed.

The commission has gone through a number of existing ideas and suggestions in Greenland that aim at using tax regulations to promote certain business activities such as conversion of business into a company; generational change; employee share options schemes; and raw material extraction. The commission has rejected all these ideas from the viewpoint that equal tax treatment of all forms of businesses, individuals and economic transactions is economically the most healthy and efficient way forward for Greenland. Special regulations for selected types of business or transactions will as indirect subsidies merely lead to distortions and inefficient use of resources.

The commission has gone through all the existing duty regulations and puts forth a number of amendments and proposals. The most significant ones are mentioned here.

Greenland should attempt to get rid off all tax regulations discouraging free competition and instead focus on raising revenue. It is the impression that Greenland has inefficient competition in goods markets (not least retail business). This is partly due to regulations (e.g. licensing systems) originated in the earlier colonial system and now administered by the Home Rule government. It is also due to the introduction of a number of trade protection measures. Especially regarding cigarettes, beers, soft drinks and lamb meat it is evident that government tax regulations are causing higher consumer prices (and profits) rather than tax revenue.

The existing duties could become more efficient revenue raisers. This is first of all obvious as far as concerns the duties on vehicles, lotteries, cigarettes, alcohol and soft drinks.

The commission also recommends the introduction of more general taxes on consumption. Greenland is one of the few countries in the world that do not tax energy at all. The commission recommends introducing a tax on energy; in the first instance, a tax on fuel used for vehicles and boats, and as the next step a tax on fuel for heating as soon as the existing subsidies for heating purposes are done away with.

Greenland is also one of very few countries not having a value added tax system, VAT, or general sales taxes. The commission recommends introducing VAT as an efficient revenue raiser with a big potential for government to achieve a means to finance lowering or abolishing other existing

taxes. A Greenlandic VAT could be adapted to the fact that Greenland has a very narrow local production base and that most commodities are imported from Denmark by ship.

## 6. Concluding remarks

This paper has reviewed the tax system in Greenland on the basis of a recent international benchmarking analysis undertaken as part of Greenland's structural action plan and as preparation for greater self-reliance of the country in the future. We have argued that because of a big block grant from Denmark that accrues directly to the public sector in Greenland, the role of the tax system in securing financing of public expenditures is reduced relative to that of other European countries.

Indeed, we also found that the tax burden on the prime factors of taxation, consumption, labour income and capital income is smaller than the European average. More specifically, the tax burden on consumption is much smaller, and the labour income tax burden somewhat smaller than this average. A main reason for this is that there is no general consumption tax in Greenland (no VAT), and personal income is taxed according to a flat-rate income tax with a modest rate.

As to capital income taxation, the corporate income tax in Greenland has a fairly high nominal rate. However, because of still very generous depreciation rules, there is less 'bite' in the corporate income tax.

On the basis of the account of the existing tax system and some considerations as to the major objectives of the tax system we went on to list a series of recommendations for altering the system in the future. We did stress, first of all, that the existing income tax system appears quite sensible for a country like Greenland with modest revenue needs. The motto is then 'keep it simple'. Retain the existing rates of corporate and personal income tax, but strengthen the corporate tax by eliminating overly favourable depreciation allowances. Likewise there is no reason to change the existing system of dividend taxation, where a rebate is given for already paid corporate tax.

To complement the flat-rate personal income tax and to improve the distributional profile of the tax system we recommended inheritance and gifts taxes, as well as taxes on property and land use.

As to indirect taxes we recommended that Greenland considers adopting some form of general consumption tax. Either a standard VAT or a similar tax, which exploits the fact that Greenland's domestic production base is very narrow, and most of imports flow from Denmark. We also argued that Greenland should introduce general energy taxation as found in all other European countries.

A major point in our analysis was that tax policy and other lines of economic policy in Greenland are interrelated. In particular, the burden on the tax system depends heavily on policy in the natural resource, industrial, housing, social and labour market areas.

As of now, the management of Greenland's resources of fish and prawns entails a net expenditure for the public fiscs. This does not have to be the case. A system of auctioning off licenses or resource depletion charges would give the public sector an opportunity for securing funds to replace distortionary taxes. Further, the public sector ownership of a series of companies implies a sizeable net expense. Instead, insisting on the invested capital yielding at least some return to the public sector also would lessen the burden on the tax system. Finally, it will be hard to find another country in which housing is more subsidized, directly and indirectly, than in Greenland. Again, moving towards a free housing market and less subsidies, for instance via taxation of property, imputed rent and land use, will yield an opportunity to cut other taxes or accommodate additional public service provision.

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